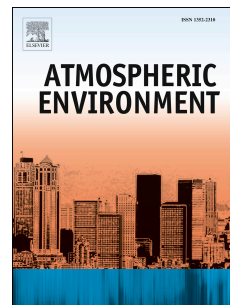


# Accepted Manuscript

Stable carbon and nitrogen isotope compositions of bulk aerosol samples over the South China Sea

Hong-Wei Xiao, Hua-Yun Xiao, Li Luo, Zhong-Yi Zhang, Qi-Wei Huang, Qi-Bin Sun, Zi-qi Zeng



PII: S1352-2310(18)30592-2

DOI: [10.1016/j.atmosenv.2018.09.006](https://doi.org/10.1016/j.atmosenv.2018.09.006)

Reference: AEA 16239

To appear in: *Atmospheric Environment*

Received Date: 5 March 2018

Revised Date: 13 August 2018

Accepted Date: 3 September 2018

Please cite this article as: Xiao, H.-W., Xiao, H.-Y., Luo, L., Zhang, Z.-Y., Huang, Q.-W., Sun, Q.-B., Zeng, Z.-q., Stable carbon and nitrogen isotope compositions of bulk aerosol samples over the South China Sea, *Atmospheric Environment* (2018), doi: 10.1016/j.atmosenv.2018.09.006.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Stable carbon and nitrogen isotope compositions of bulk aerosol samples over the South China Sea

Hong-Wei Xiao<sup>1,2</sup>, Hua-Yun Xiao<sup>1,2\*</sup>, Li Luo<sup>1,2</sup>, Zhong-Yi Zhang<sup>1,2</sup>, Qi-Wei Huang<sup>1,2</sup>, Qi-Bin Sun<sup>1,2</sup>, Zi-qi Zeng<sup>1,2</sup>

<sup>1</sup>Jiangxi Province Key Laboratory of the Causes and Control of Atmospheric Pollution, East China University of Technology, Nanchang 330013, China

<sup>2</sup>School of Water Resources and Environmental Engineering, East China University of Technology, Nanchang 330013, China

\*Correspondence to: Hua-Yun Xiao ([xiaohuayun@ecit.cn](mailto:xiaohuayun@ecit.cn))

### Abstract

The marine aerosols is mainly produced primary sea salt and secondary form of non-sea salt (nss) sulfate and organic species from marine emission, but get modified significantly by the anthropogenic and terrestrial materials, such as total carbon (TC) and total nitrogen (TN), which transported by the atmospheric circulation from land to the ocean. Rarely studies focus on the total carbon (TC) and total nitrogen (TN) in marine aerosol in the open ocean due to the sampling difficulty, let alone the annual observation. Concentrations of TC and TN, and their isotope compositions ( $\delta^{13}\text{C-TC}$  and  $\delta^{15}\text{N-TN}$ ) were measured in total suspended particulate (TSP) which sampled at Yongxing Island over the South China Sea from March 2014 to February 2015, and coastal mega-city Guangzhou in April/May and October/November, 2014. The annual average concentrations of TC and TN at Yongxing Island were  $4.20 \pm 2.38 \mu\text{g m}^{-3}$  and  $0.77 \pm 0.47 \mu\text{g m}^{-3}$ , respectively. Much higher concentration of TC and TN were observed at Guangzhou. Contributions of  $\text{NO}_3^-$  and  $\text{NH}_4^+$  (inorganic nitrogen, IN) to TN at Yongxing Island averaged 55.7% and 6.8%, respectively, while they averaged 27.4% and 12.2% at Guangzhou, respectively. The average values of

Download English Version:

<https://daneshyari.com/en/article/8965970>

Download Persian Version:

<https://daneshyari.com/article/8965970>

[Daneshyari.com](https://daneshyari.com)